# Lesson Study Based Learning Practical Development for Prospective Teacher in Higher Education

*by* Fuad Jaya Miharja

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# LESSON STUDY BASED LEARNING PRACTICAL DEVELOPMENT FOR PROSPECTIVE TEACHER IN HIGHER EDUCATION

**Fuad Jaya Miharja*, Iin Hindun, Poncojari Wahyono, Nurwidodo, Rr. Eko Susetyarini**
Biology Education Program – Faculty of Teacher Training and Education
University of Muhammadiyah Malang
Jl. Raya Tlogomas No. 246 Malang City
*Corresponding email: fuad.jayamiharja@umm.ac.id

**Abstract**

Improving the quality of education depends not only on the professionalism of the teachers but also on the sustainable teacher management system. A good management system can help identify weaknesses and find solutions. The system also includes a pre-service teacher guidance system devoted to coaching prospective teachers in order to initiate teachers' professional values early on. The development of LS is conducted in 4 cycles, each cycle discussing 1 topic. Each cycle consists of 4 stages including: 1) determination of goal setting, 2) planning, 3) implementation, and 4) evaluation. The development of LS in this activity is monitored and analyzed in every cycle. In cycle I and II, the percentage of LS implementation is 89.17%. While in cycle III and IV the percentage of LS implementation increased to 91.04%. In general, it indicates the improvement of quality or refinement of LS implementation conducted by expert team. The interaction is constructively and collaboratively to support the process of developing knowledge on the students as prospective teachers.

**Keywords:** *Practical Development, Lesson Study, Student Prospective Teacher*

Teacher professionalism is a quality and behavior that characterizes the profession as an educator (Prihantoro, 2011). One of the characteristics of teacher professionalism is a commitment to continue to create creative ideas as well as to translate their professional capacity in teaching to their students. The central role of teachers in this education has consequences on the obligation to continue to study throughout life, innovate, open up to achieve certain competence qualifications, and foster networking with related parties (Muhson, 2004). It is also a value and demand of learning 21. The demands of changing the mindset of 21st century humans also demanded a major change in the national education system. In line with this, the government through the Ministry of Education and Culture (Kemendikbud) formulates that the learning of the 21st century emphasizes the ability of learners in finding out from various sources, formulate problems, analytic thinking, cooperate and collaborate in the settlement of the problem (Litbang Kemendikbud, 2013) in Wijaya (2016).

On the other hand, improving the quality of education not only depends on the aspect of professionalism, but equally important is the existence of a sustainable teacher-building management system. A well-run management system can help identify existing weaknesses and find solutions to fix it. The system includes both in-service and pre-service teacher training for prospective teachers in order to instill and foster teachers professional values from an early age. Student prospective teachers are the resources that have a strategic role as the successor of the development of education in the future. The development of the quality of human resources is determined by the quality of competencies

possessed by prospective teachers, whether related to professional, pedagogic, personality, and social competence. The development of multi-competence that started early even when they are still a student is one way to maintain the quality of education nationally in the end. One way in developing the competence of prospective teachers can be done in higher education is emerging of learning based on lesson study (LS).

LS is a professional coaching that is implemented in a collaborative and sustainable way that aims to improve the quality of learning processes and results (Widodo, Widodo, and Nurjhani, 2007). The implementation of LS covers the planning, implementation and evaluation stages held jointly (collectively-collegial), sustainable and aims at improving the quality of learning (Andini, 2016). LS is a comprehensive approach to professional learning as well as supporting teachers to be long life learners in the effort to develop and improve the quality of learning in the classroom.

**Lesson Study Development**

According to Stigler and Hiebert (1999) and Prihantoro (2011) LS generally follow the 8 main steps include 1) defining problems both general and specific, 2) planning collaborative learning process, 3) implementation of learning by model and observation by observer, 4) conducting discussions and reflections on learning activities undertaken, 5) revision and refinement of subsequent learning activities, 6) implementation of learning based on previous revisions, 7) evaluation and follow-up reflection and 8) dissemination of experience in the form of discussion and publication. However, the eight stages are not absolute and binding, but can be developed based on the characteristics of learning and goals to be achieved .

**Development Implementation**

This LS development is done in 4 cycles, each cycle discussing 1 topic. Each cycle consists of 4 stages including: 1) determination of goal setting, 2) planning (plan), 3) implementation (do), and 4) evaluation (see). LS cycle as described in Figure 1 below.


Figure 1. The development cycle of lesson study based learning activities

**Goal Setting**

This stage includes several activities, including the identification of learning objectives, the determination of LS implementation schedule, and the formation of teams. At this stage, the lecturers and the team collaborate to determine the final capabilities that the student wants to achieve on each topic and indicator. This is to facilitate the determination of the development steps that must be done to achieve the learning objectives.

The second step is arrengement of implementation schedule within 1 week. The schedule adjusts and considers the lecture schedules of each class involved in the activities. The preparation of this schedule is needed to: 1) facilitate the implementation of lessons in the field, 2) establish commitment and responsibility to

all parties involved, and identify achievements or barriers to each learning process. Schedule prepared, set to be implemented consistently and continuously in every week. Complete schedule of LS implementation as in Table 1 below.

Table 1. Schedule of *Lesson Study* Activities

| No | Activities | Class | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| 1 | Plan | Saturday | Tuesday | Wednesday | Thursday |
| 2 | Do | Tuesday | Wednesday | Thursday | Friday |
| 3 | See | Tuesday | Wednesday | Thursday | Friday |

Information
: lecture schedule

The third step is the formation of a team of students. The team in this development consists of small teams and teams of experts who are divided on the basis of each other. Both teams have different duties and responsibilities. The small team is a self-study group of 4-5 students, so there are a total of 32 small teams. The small team is in charge of discussing the topics that have been set up in each week. It aims to improve students' level of competence within the team and foster trust and responsibility.

The team of experts in this activity is a combination of 4 small teams with the same topic in each class. The expert team then acts as a modler and explains it in front of the class. Together, the expert team is facilitated by the lecturers to be able to prepare the lesson plans in the form of *chapter plan* , strategy and instructional media. Illustration of small team division and expert team as described in Figure 2. In each cycle, the team of experts and lecturers are actively involved in each *plan, do,* and *see activities* as a whole .

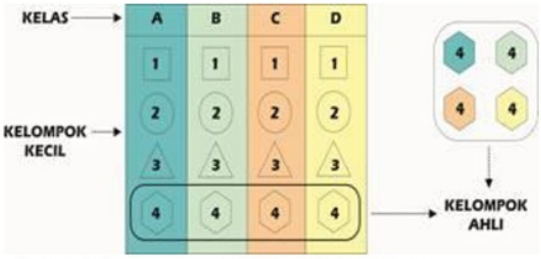


Figure 2. Illustration of small team determination and team of experts

**Implementation ( *Plan* )**

At this stage, the lecturers together with the team of experts collaboratively construct the *chapter plan. Chapter plan is* organized based on 3 stages of learning, covering 1) apersepsi (initial) stage, 2) core activities, and 3) reflection (end) with adjusted duration of time. In apperception activities, the expert group is stimulated to be able to determine the exact instance or apperception of the topic to be discussed. It is aimed that at the time of implementation of learning in the classroom, the team of experts can provide stimulus and focus students on the topics to be explained. Stimulus can be done in the form of video, demonstration and gambar.Kegiatan core is designed in the form of explanation and understanding of the concept from the easiest to the most complicated.Sedangkan in the final activities of reinforcement ( *reinforcement*) material and conclusions. *Chapter plan* is arranged as in Figure 3 below.

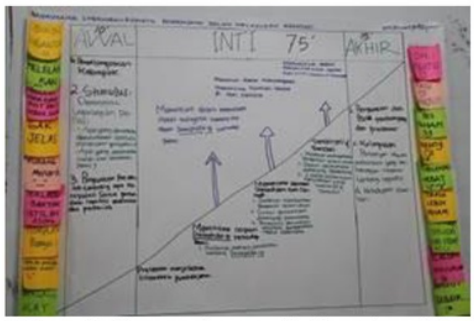


Figure 3. *Chapter plan* compiled in each weekly learning cycle

Preparation of chapter plan is adjusted with: 1) indicators on each topic related to breadth and depth of material that is in RPS, 2) identification of characteristics and learning performance problems of students in each class, and 3) duration of time required in conducting learning activities. It aims to improve the quality of student learning in general as well as to direct and teach what and how students should learn.

The team of experts along with the lecturers describes practical ways or solutions that may be possible to solve emerging problems, choose the best alternatives to be tested, prepare *teaching materials*and design innovative learning strategies for the selected topics.Because the focus of the discussion includes teaching materials, *teaching materials* , innovative learning strategies, the parties involved in the discussion will contribute according to their abilities and experiences. Thus, there is a *sharing of* experience and knowledge constructively, so that his insight into learning problems growing (Sadia, 2008).

At the start of each exercise planning ( *plan* ) a team of experts with lecturers arrange *chapters plan* to use in class A. So, *chapter plan* is compiled based on the characteristics of class A. On an ongoing basis, *the chapter plans* were developed and adapted to the next class.

**Implementation ( *Do* )**

At this stage, a team of experts acted as a model in carrying out learning activities in accordance with the agreed-upon *chapter plan* , while the other three expert teams acted as observers to collect data and record the events or activities of the students during the learning process. Tim observer collected data using the sheet of execution LS and other instruments. The observation and learning ( *do* ) is used as a basis for planning ( *plan* ) for the next class and group members. In principle, expert groups are tasked with explaining or presenting topics owned to other groups in their class and acting as models (Figure 4).

Figure 4. Implementation of *chapter plan* in classroom leaming

In conducting classroom learning, all members of the team of experts perform the division of tasks, there is a role as an instructor in front of the class there is also a duty as a facilitator of discussion on small teams. The implementation of LS demands effective cooperation and communication within the team. Therefore, all members within the team must actively and jointly monitor student learning activities and activities as well as to regulate the learning models and strategies set out in the *chapter plan.*

At the time of execution in the classroom, the expert team gets the freedom to control the course of learning. Innovations by expert teams can be seen from how they are able to translate learning indicators, identify classical and personal problems in an active, practical, effective, and fun learning activity. Therefore, the chosen learning strategy is not only limited to discussion, but able to be packed interesting in mini practical activities, quiz with prizes, video or demonstration in front of class and using both written and picture media.

At the end of the activity, the team of experts was able to collect the conclusions from the students on the topics covered. The conclusion presented is a building concept that is built based on the learning activities that have been done as

well as reference or understanding of the concept that has been previously owned.

**Evaluation**

At this stage, the lecturers together with the expert team discuss and analyze the findings obtained at the implementation stage (do).

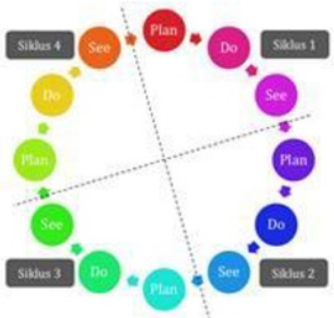


Figure 4. 4 Cycles of LS Implementation

This evaluation activity is conducted immediately after the learning process is complete. Collaboratively lecturers and expert teams identify the constraints encountered at the time of learning. Illustration of the implementation stages of LS learning is described in Figure 5.

Implementation of the evaluation is based on the spirit of collaborative development by taking into account: 1) study of the implementation of the lesson plan in the chapter plan; 2) the steps that need to be done in the next cycle; 3) the positive things that appear in the LS process and need to be maintained and developed; LS success in developing knowledge, concepts and learning activities , 5) involvement of all students and teams in LS, and 6) on inspirational matters that can be disseminated to all parties involved (Sadia, 2008)

**IMPLEMENTATION OF LS**

Development of LS in this activity is monitored and analyzed in every cycle. In practice, cycle I and II is done before midterm examination while cycle III and IV is done after midterm examination. LS implementation in that period is obtained through observation sheet of LS implementation filled by observer . The results of monitoring of LS implementation are described in Figure 6 below.

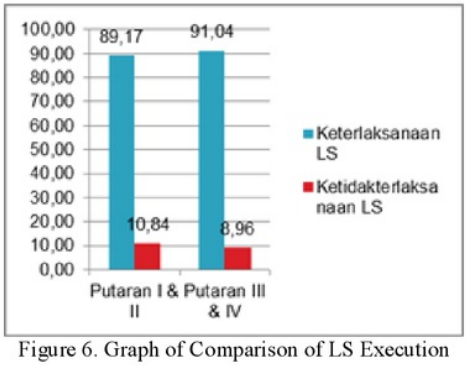


Figure 6. Graph of Comparison of LS Execution

In cycle I and II, the percentage of LS implementation is 89.17%. This is because not all indicators are observed at the time of the activity. One indicator that does not arise is the involvement of all members of the expert team in preparing the *chapter plan* and arranging the learning instrument at the time of the plan. In these activities, the *chapter plan* and instrument are still dominated by some members of the expert team with faculty guidance and facilitation.

In cycle III and IV, the percentage of LS implementation increased to 91.04%. This indicates that there is an improvement in the quality of LS implementation conducted by a team of experts. Nevertheless every implementation written in the chapter plan remains the subject of discussion as a refinement and anticipatory step. The shortcomings of the *chapter plan* , media and instruments were then scrutinized and improved together by the team through open discussion.

Constructive and collaborative interactions support the development of knowledge in students as prospective teachers (Wahyono *et al* , 2016). This is in line with the statement of Nursafitri (2015); Hendayana (2006); Riandi (2006) that learning with a collaborative model based on the principles of collegiality can

evoke internal developments capable of operating only when students interact and work with colleagues. With the establishment of a team in a lesson, it facilitates the implementation of professional tasks of educators. As seen in the implementation of this activity.

The presence of observers in the team is felt to be helpful in terms of 1) preparation or planning, and 2) facilitating the implementation of the *chapter plan* in learning, especially if it has to continuously observe the activities undertaken by the students.

**Positive Value Provided**

Implementation of LS as an innovation in the learning process provides many positive values for students. The most important thing is the emergence of self-confidence from within students so as to demonstrate the learning performance either as a team of experts or as a small team. Some of the things that arise as a positive impact of LS implementation include:

1) The change of attitude of the students from the passive become more active and collaborative because with open learning can be a stimulus and cultivate student initiative in building the concept of learning.
2) Improvement of student skills that can be seen from the ability of expert teams in designing learning scenarios by making learning videos with the topic of gene regulation, mini lab work with population genetic topics, learning games to attract focus and interest in student learning and,
3) Transfer of experience from lecturer to student as a teacher candidate in preparing the learning starting from the determination of learning objectives, planning and teaching strategies, learning implementation and identification of problems that arise up to evaluation to get the best formula for the implementation of the next learning.
4) Establishment of Lesson Study Students Clubs which is a pioneer of LS student development which always becomes a place of practice, collaboration and finding innovations in learning.

## CONCLUSION

Implementation and development of LS can improve students' knowledge about LS concepts, principles and practices. In turn, the increase of knowledge can be *best practices* for prospective students in improving their competence and in implementing LS development in the future.

LS is also able to build a culture of openness in carrying out professional duties considering in college, lecturers are not the main source of information, so that good communication between lecturers and students is able to generate new spirit to produce a better quality of learning and value.

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